**CLAIMS:**

1. A gateway for conveying a telephone call to a packet switched data network, the gateway comprising a first interface for receiving out of band telephone signals from a telephone network, a second interface for transmitting said out of band telephony signals over said data network to a second gateway to facilitate call setup.

2. The gateway of claim 1 wherein said out of band signals are call setup signals just prior to a telephone call being completed.

3. The gateway of claim 2 wherein said out of band signals are SS7 protocol signals.

4. A method of call setup for use in calls that travel at least partially over a packet switched data network, the method comprising transmitting out of band telephony signals from a first gateway to a second gateway over said packet switched data network, at least some of said out of band signals also being transmitted from a switch in a telephone network to said first gateway.

5. The method of claim 4 wherein the out of band telephony signals are also sent to a gatekeeper within said packet switched data network.

6. The method of claim 6 wherein the out of band telephony signals are SS7 signals.

7. An originating gateway for use in completing telephone calls over the Internet comprising software to ascertain whether a potential

terminating gateway has out of band telephony signaling capability or not; and software to communicate with said potential terminating gateway using such out of band telephony signaling if said gateway has said capability.

8. The originating gateway of claim 7 further comprising software to communicate with said terminating gateway using a voice over Internet protocol for call setup.

9. The originating gateway of claim 8 further comprising software to communicate with the terminating gateway using a voice over Internet protocol for communicating a media steam.

10. A method for use in an originating gateway for implementing call setup to establish a telephone call that will be transmitted at least partially over a packet switched data network, the method comprising implementing, at a first interface, out of band call setup signaling using an out of band protocol between said originating gateway and a telephony network from which a call arrives, and implementing said out of band signaling at a second interface between said originating gateway and a computer connected to said packet switched data network to facilitate call setup.

11. The method of claim 10 wherein the computer connected to said packet switched data network is a gatekeeper or a terminating gateway.

12. The method of claim 11 wherein said computer connected to said packet switched data network is a terminating gateway and wherein said originating gateway and said terminating gateway communicate via out of band telephony signaling.

13. The method of claim 12 wherein said out of band telephony signaling is SS7 signaling.

14. In a system comprising a packet switched data network interconnecting at least two telephony networks, a method of performing call setup comprising utilizing an out of band telephony signaling protocol across the two telephony networks, and utilizing a separate call setup protocol within the packet switched telephony network.

15. The method of claim 14 wherein, within the packet switched data network, the out of band telephony protocol signaling is utilized in addition to the separate call setup protocol.

16. The method of claim 15 wherein said out of band telephony protocol signaling is SS7 or C7 signaling and said separate call setup protocol is H.323.

17. A gateway for conveying a call from a telephony network to a packet switched data network, the gateway comprising an out of band telephony signaling interface to the telephony network, software for determining whether to communicate call setup messages with a potential terminating gateway via an out of band telephony signaling network or via said packet switched data network.

18. The gateway of claim 17 wherein said software also includes software to determine whether said potential terminating gateway includes a capability to communicate said out of band telephony signaling via said packet switched network or not.

19. The gateway of claim 17 wherein said out of band telephony signaling is SS7 or C7 signaling.

20. The gateway of claim 19 wherein said software also selects whether to use said out of band telephony signaling to communicate between said gateway and said potential terminating gateway.

21. The gateway of claim 20 wherein said software so selects based upon capabilities within said terminating gateway.

22. In a system comprising a packet switched data network bridging a first telephony network and a second telephony network, a method of performing call setup for a call originated at said first telephony network toward said second telephony network, comprising the steps of:

implementing call setup across said first and second telephony networks with an out of band telephony signaling protocol, and

implementing call setup within said packet switched data network with a separate call signaling protocol,

wherein said step of implementing call setup within said packet switched data network is carried out after information on a resources status in the second telephony network is available.

23. The method of claim 22 further comprising a step of transmitting call setup messages from said first telephony network to said second telephony network with said out of band telephony signaling protocol.

24. The method of claim 23 wherein said out of band signaling protocol is SS7.

25. The method of claim 24 wherein said step of transmitting call setup messages comprising sending an IAM (Initial Address Message) from an origination point signaling controller of said first telephony network to a termination point signal controller of said second telephony network.

26. The method of claim 25 further comprising a step of sending an ACM ( Answer Complete Message) from said termination point signaling controller to said origination point signaling controller, confirming that said second telephony network is capable of taking the call.

27. The method of claim 26 wherein said ACM is sent by said termination point signaling controller after said call setup in said second telephony network is successfully implemented.

28. The method of claim 26 wherein said separate signaling protocol is H.323.

29. The method of claim 28 further comprising a step of sending an ARQ (AnswerReQuest) or equivalent from an originating gateway of said packet switched data network to said origination point signaling controller,

and, a step of sending, in response of said ARQ, an ACF (AnswerConFirm) from said originating point signaling controller to said originating gateway.

30. The method of claim 29 further comprising a step of sending, from said originating point signaling controller to said originating gateway, an indicator indicating that said call is headed to an SS7 network.

31. The method of claim 30 further comprising a step of holding said ACF at said originating gateway, waiting for a confirmation that said setup in said second telephony network is successful before starting said step of implementing call setup within said packet switched data network with H.323 protocol.

32. The method of claim 31 further comprising a step of sending said confirmation from said origination signaling controller to said originating gateway, upon receipt of said ACM at said origination signaling controller.

33. The method of claim 32 wherein said step of implementing call setup within said packet switched data network with H.323 protocol is started upon said originating gateway's receipt of said confirmation.

34. The method of claim 32 further comprising a step of sending a release message from said termination point signaling controller to said

origination point signaling controller if said termination point signaling controller cannot take said call, and upon receipt of said release message, said origination point signaling controller selecting another termination point signaling controller.

35. The method of claim 22 further comprising a step of determining, at said origination point signaling controller, whether to transmit call setup messages to a potential termination point signaling controller by said out of band telephony signaling protocol or by said separate protocol.